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Docket No. 5408/0A237-US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reexamination of :
U.S. Patent No. 5,565,109 : of Philip G. Sweeny
Control No. 90/004,700 : Art Unit 1724
Filing Date July 22, 1997 : Examiner P. Hruskoci
For: HYDANTOIN-ENHANCED HALOGEN EFFICACY
IN PULP AND PAPER APPLICATIONS

RESPONSE TO REEXAMINATION ADVISORY ACTION

Assistant Commissioner of Patents
Washington, DC 20231
Box AF

Sir:

This is in response to the Reexamination Advisory Action mailed May 12, 1999 in the above-identified reexamination.

Please substitute the following amendment for the amendment filed on April 27, 1999.

Please amend the subject application as follows:

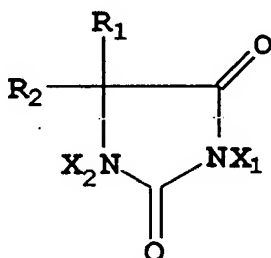
--4. (thrice amended) The [method] papermaking process of claim [1] 16 wherein from 0.1 to 10 ppm of active slimicide (expressed as Cl₂) is maintained in the circulating water [system] slurry.

--16. In a process for making paper from pulp fiber wherein from 0.2 to 3% of organic matter comprising from 95 to 99% pulp fiber is maintained in a circulating water slurry in the presence of sizing, the improvement of performing said process in the presence of a slimicidally effective amount of an N-hydrogen compound and a slimicide in a molar ratio of from 0.1:1 to 10:1 in said circulating water slurry; wherein said N-hydrogen compound is p-toluenesulfonamide, dimethylhydantoin, methylethylhydantoin, cyanuric acid, succinimide, urea, 4,4-dimethyl-2-oxazolidinone, and glycouril and said slimicide is chlorine gas, bromine, bromine chloride, an alkali metal or alkaline earth metal hypohalite, a halogenated hydantoin, a halogenated cyanurate, or halogenated cyanuric acid and the amount of the N-hydrogen compound present in said circulating water slurry is sufficient to enhance the biological efficacy of the slimicide and reduce absorbable organic halogen (AOX) by-product formation.

17. The papermaking process of claim 16 wherein the slurry is at a pH of from about 5.0 to about 5.5.

18. In a process for making paper from pulp fiber wherein from 0.2 to 3% of organic matter comprising from 95 to 99% pulp fiber is maintained in a circulating water slurry in the

presence of sizing, the improvement of performing said process in the presence of a slimicidally effective amount of an N-hydrogen compound and a slimicide in a molar ratio of from 0.1:1 to 10:1 in said circulating water slurry; wherein said N-hydrogen compound is p-toluenesulfonamide, dimethylhydantoin, methylethylhydantoin, cyanuric acid, succinimide, urea, 4,4-dimethyl-2-oxazolidinone, and glycouril and said slimicide is a halogenated hydantoin of the formula



wherein R₁ and R₂ are independently selected from the group consisting of lower alkyl having 1 to 12 carbon atoms, wherein X₁ and X₂ are independently selected from the group consisting of bromine and chlorine, and the amount of the N-hydrogen compound present in said circulating water slurry is sufficient to enhance the biological efficacy of the slimicide and reduce absorbable organic halogen (AOX) by-product formation.--

REMARKS

This paper is in response to the Reexamination Advisory Action dated May 12, 1999 as clarified by the telephone conference with the Examiner on May 11, 1999.

The Advisory Action indicated that claims 16-18 did not comply with 37 C.F.R. 1.53(d) and MPEP 2250.

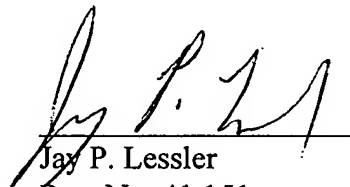
To correct the defect, this amendment is submitted as a substitute for the amendment submitted on April 27, 1999. In this amendment, claim 4 has been amended and claims 16-18 have been added. Therefore, claims 2-4, 8, 11, 12, and 16-18 are pending.

The amendments to claims 16-18 have been made relative to the patent claims as required by 37 C.F.R. 1.530(d)(2)(i)(A) and 1.530(d)(2)(i)(C) and MPEP 2250.

The patentee wishes to thank the Examiner for the courtesies extended during the telephone conference. Should the instant amendment be in any way deficient, the Examiner is respectfully requested to call patentee's attorney by phone.

Dated: May 20, 1999

Respectfully submitted,


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Control No. 90/004,700
Re examination of U.S. Patent 5,565,109
Amendment after Final Rejection